In the Claims

This listing of claims will replace all prior versions and listings of claims in the instant application:

1. (currently amended) A method of diagnosing a voice signal, ~~voices~~ comprising:

~~recording a speaker's voice directly from a human;~~

~~generating a voice signal based on the speaker's voice;~~

processing ~~the~~ a voice signal using an auditory model to produce a processed voice signal;

identifying one or more voice quality attributes of said ~~speaker's voice~~ voice signal by analyzing said processed voice signal;

comparing said one or more voice quality ~~identified~~ attributes ~~in~~ of said ~~speaker's~~ voice signal with one or more baseline vocal quality attributes in order to determine at least one measure of vocal quality of the voice signal. ~~derived from at least one baseline voice signal, said derived attributes associated with at least one baseline measure of vocal quality of a human speaker; and~~

~~based upon said comparing step, determining at least one objective measure of vocal quality of said speaker's voice, said at least one objective measure defining a degree of vocal quality of said speaker's voice relative to said at least one baseline measure of vocal quality of a human speaker.~~

2. (Cancelled).

3. (Previously Presented) The method of claim 1, wherein said at least one measure of vocal quality is at least one of roughness and hoarseness.

4. (currently amended) The method of claim 3, wherein the ~~identified~~ one or more voice quality attributes of said ~~speaker's~~ voice signal include changes in pitch over time and changes in loudness over time in said processed voice signal.

5. (currently amended) The method of claim 4, wherein the <u>one or more voice</u> <u>quality</u>~~identified~~ attributes of said ~~speaker's~~ voice <u>signal</u> include a measure of partial loudness in said processed voice signal.

6. (currently amended) The method of claim 1, wherein said at least one measure of vocal quality is breathiness.

7. (currently amended) The method of claim 6, wherein the ~~identified~~ <u>one or more voice</u> <u>quality</u> attributes of said ~~speaker's~~ voice <u>signal</u> include a measure of low frequency periodic energy in said processed voice signal.

8. (currently amended) The method of claim 6, wherein the ~~identified~~ <u>one or more voice</u> <u>quality</u> attributes of said ~~speaker's~~ voice <u>signal</u> include a measure of high frequency aperiodic energy in said processed voice signal.

9. (currently amended) The method of claim 6, wherein the ~~identified~~ <u>one or more voice</u> <u>quality</u> attributes of said ~~speaker's~~ voice <u>signal</u> include a measure of partial loudness of a periodic signal portion of the processed voice signal.

10. (currently amended) The method of claim 6, wherein the ~~identified~~<u>one or more voice</u> <u>quality</u> attributes of said ~~speaker's~~ voice <u>signal</u> include a measure of noise in the processed voice signal and a measure of partial loudness of the processed voice signal.

11. (currently amended) A system for diagnosing ~~voices~~ <u>a voice signal</u> comprising a controller to:

~~record a speaker's voice directly from a human;~~

~~generate a voice signal based on the speaker's voice;~~

process ~~the~~<u>a</u> voice signal using an auditory model <u>to produce a processed voice signal</u>;

~~identifying~~<u>identify</u> one or more <u>voice quality</u> attributes of said ~~speaker's~~ voice <u>signal</u> by

analyzing said processed voice signal;

compare said ~~identified~~ one or more voice quality attributes ~~in said speaker's~~ of the voice signal with one or more baseline vocal quality attributes in order to determine at least one measure of vocal quality of said voice signal. ~~at least one baseline voice signal, said baseline vocal quality attributes associated with at least one baseline measure of vocal quality of a human speaker; and~~

~~determine at least one objective measure of vocal quality of said speaker's voice based upon said comparison, said at least one objective measure defining a degree of vocal quality of said speaker's voice relative to said at least one baseline measure of vocal quality of a human speaker.~~

12. (Cancelled).

13. (Previously Presented) The system of claim 11, wherein said at least one measure of vocal quality is at least one of roughness and hoarseness.

14. (currently amended) The system of claim 13, wherein the ~~identified~~ one or more voice quality attributes of said ~~speaker's~~ voice signal include changes in pitch over time and changes in loudness over time in said processed voice signal.

15. (currently amended) The system of claim 14, wherein the ~~identified~~ one or more voice quality attributes of said ~~speaker's~~ voice signal include a measure of partial loudness in said processed voice signal.

16. (Previously Presented) The system of claim 11, wherein said at least one measure of vocal quality is breathiness.

17. (currently amended) The system of claim 16, wherein the ~~identified~~ one or more voice quality attributes of said ~~speaker's~~ voice signal include a measure of low frequency periodic energy in said processed voice signal.

18. (currently amended) The system of claim 16, wherein the~~identified~~ one or more voice quality attributes of said ~~speaker's~~ voice signal include a measure of high frequency aperiodic energy in said processed voice signal.

19. (currently amended) The system of claim 16, wherein the ~~identified~~ one or more voice quality attributes of said ~~speaker's~~ voice signal include a measure of partial loudness of a periodic signal portion of the processed voice signal.

20. (currently amended) The system of claim 16, wherein the ~~identified~~ one or more voice quality attributes of said ~~speaker's~~ voice signal include a measure of noise in the processed voice signal and a measure of partial loudness of the processed voice signal.

21. (currently amended) A computer-readable storage, having stored thereon a computer program having a plurality of code sections executable by a computer for causing the computer to perform ~~the steps of~~ a method for diagnosing a voice signal, the method comprising:

~~recording a speaker's voice directly from a human;~~

~~generating a voice signal based on the speaker's voice;~~

processing, via the computer, ~~the~~ a voice signal using an auditory model to produce a processed voice signal;

identifying one or more voice quality attributes of said ~~speaker's~~ voice signal by analyzing said processed voice signal;

comparing said ~~identified~~ one or more voice quality attributes ~~in~~ of said ~~speaker's~~ voice signal with one or more baseline vocal quality attributes in order to determine at least one measure of vocal quality of said voice signal.~~derived from at least one baseline vocal signal, said derived attributes associated with at least one baseline measure of vocal quality of a human speaker; and~~

~~based upon said comparing step, determining at least one objective measure of vocal quality of said speaker's voice, said at least one objective measure defining a degree of vocal quality of said speaker's voice relative to said at least one baseline measure of vocal quality of a human speaker.~~

22. (Cancelled).

23. (Previously Presented) The computer-readable storage of claim 21, wherein said at least one measure of vocal quality is at least one of roughness and hoarseness.

24. (currently amended) The computer-readable storage of claim 23, wherein the ~~identified~~ one or more voice quality attributes of said ~~speaker's~~ voice signal include changes in pitch over time and changes in loudness over time in said processed voice signal.

25. (currently amended) The computer-readable storage of claim 24, wherein the ~~identified~~ one or more voice quality attributes of said ~~speaker's~~ voice signal include a measure of partial loudness in said processed voice signal.

26. (Previously Presented) The computer-readable storage of claim 21, wherein said at least one measure of vocal quality is breathiness.

27. (currently amended) The computer-readable storage of claim 26, wherein the ~~identified~~ one or more voice quality attributes of said ~~speaker's~~ voice signal include a measure of low frequency periodic energy in said processed voice signal.

28. (currently amended) The computer-readable storage of claim 26, wherein the ~~identified~~ one or more voice quality attributes of said ~~speaker's~~ voice signal include a measure of high frequency aperiodic energy in said processed voice signal.

29. (currently amended) The computer-readable storage of claim 26, wherein the ~~identified~~ one or more voice quality attributes of said ~~speaker's~~ voice signal include a measure of partial loudness of a periodic signal portion of the processed voice signal.

30. (currently amended) The computer-readable storage of claim 26, wherein the ~~identified~~ one or more voice quality attributes of said ~~speaker's~~ voice signal include a measure of noise in the processed voice signal and a measure of partial loudness of the processed voice signal.

31. (new) The method according to claim 1, further comprising:

recording a speaker's voice; and

generating the voice signal based on the recording of the speaker's voice.

32. (new) The method according to claim 1, wherein the one or more baseline vocal quality attributes are derived from at least one baseline voice signal.

33. (new) The method according to claim 1b, wherein the one or more baseline vocal quality attributes are associated with at least one baseline measure of vocal quality of a human speaker.

34. (new) The method according to claim 1, wherein the at least one objective measure of voice quality of the voice signal defines a degree of vocal quality of the voice signal relative to the at least one baseline measure of vocal quality of a human speaker.

35. (new) The method according to claim 1, wherein the at least one measure of voice quality is an objective measure of voice quality.

36. (new) The method according to claim 1, wherein the auditory model is a transfer function corresponding to a human auditory system.

37. (new) The method according to claim 1, wherein the auditory model is a transfer function corresponding to an outer portion and middle portion of a human ear, an excitation pattern elicited on a basilar membrane, within a cochlea, and transduction of the excitation pattern into neural activity in fibers of an auditory nerve.

38. (new) The method according to claim 1, transmitting the voice signal through a communication channel prior to processing the voice signal.

39. (new) The system according to claim 11, wherein the controller is to further:

record a speaker's voice; and

generate a voice signal based on the recording of the speaker's voice.

40. (new) The system according to claim 11, wherein the one or more baseline vocal quality attributes are derived from at least one baseline voice signal.

41. (new) The system according to claim 11b, wherein the one or more baseline vocal quality attributes are associated with at least one baseline measure of vocal quality of a human speaker.

42. (new) The system according to claim 11, wherein the at least one measure of voice quality of the voice signal defines a degree of vocal quality of the voice signal relative to the at least one baseline measure of vocal quality of a human speaker.

43. (new) The system according to claim 11, wherein the at least one measure of voice quality is an objective measure of voice quality.

44. (new) The system according to claim 1, wherein the auditory model is a transfer function corresponding to a human auditory system.

45. (new) The system according to claim 1, wherein the auditory model is a transfer function corresponding to an outer portion and middle portion of a human ear, an excitation pattern elicited on a basilar membrane, within a cochlea, and transduction of the excitation pattern into neural activity in fibers of an auditory nerve.

46. (new) The system according to claim 1, transmitting the voice signal through a communication channel prior to processing the voice signal.

47. (new) The computer-readable storage according to claim 21, wherein the method further comprises:

recording a speaker's voice; and

generating a voice signal based on the recording of the speaker's voice.

48. (new) The computer-readable storage according to claim 21, wherein the one or more baseline vocal quality attributes are derived from at least one baseline voice signal.

49. (new) The computer-readable storage according to claim 21b, wherein the one or more baseline vocal quality attributes are associated with at least one baseline measure of vocal quality of a human speaker.

50. (new) The computer-readable storage according to claim 21, wherein the at least one measure of voice quality of the voice signal defines a degree of vocal quality of the voice signal relative to the at least one baseline measure of vocal quality of a human speaker.

51. (new) The computer-readable storage according to claim 21, wherein the at least one measure of voice quality is an objective measure of voice quality.

52. (new) The computer-readable storage according to claim 1, wherein the auditory model is a transfer function corresponding to a human auditory system.

53. (new) The computer-readable storage according to claim 1, wherein the auditory model is a transfer function corresponding to an outer portion and middle portion of a human ear, an excitation pattern elicited on a basilar membrane, within a cochlea, and transduction of the excitation pattern into neural activity in fibers of an auditory nerve.

54. (new) The computer-readable storage according to claim 1, transmitting the voice signal through a communication channel prior to processing the voice signal.